

CLAIMS

1. A portable and autonomous biological detector (1) enabling the presence of biological agents of the bacteria, viruses, protozoan, or toxin type to be detected in a sample, 5 wherein it integrates into a same body (2):

- means (8) to extract a sample from the environment, be it solid, liquid or gaseous,

- means (4) for the biological culture or magnification of said sample,

- 10 - detection means (5) inducing a reaction, said reaction being either colourmetric and visible to the naked eye thanks to a transparent viewfinder (9), or detectable by a separate system.

2. A portable and autonomous biological detector (1) 15 according to Claim 1, wherein the reaction is detected by a physical and/or optical system such as a laser or by infrared light, ultraviolet light or by electron beam.

3. A biological detector (1) according to Claims 1 or 2, wherein the sample extraction means (8) are of the manual or 20 automatic type.

4. A biological detector (1) wherein the sample extraction means (8) are in the form of a sampling brush.

5. A biological detector (1) according to any one of Claims 1 to 3, wherein the sample extraction means (8) 25 incorporate a biocollector.

6. A biological detector (1) according to any one of Claims 1 to 3, wherein the sample extraction means (8) are constituted by a syringe.

7. A biological detector according to any one of Claims 1 30 to 6, wherein the sample extraction means (8) are in the form of a plug (3) able to be screwed or nested onto the body (2) of the biological detector and incorporating a lip (15) ensuring its sealing with this body, such plug being made of stainless metal or a plastic metal and provided with the 35 instrument enabling the extraction of the samples.

8. A biological detector according to any one of Claims 1 to 7, wherein the culture or magnification means incorporate a culture medium (11) contained in a breakable ampoule (10)

so as to allow the sample to be brought into contact with said culture medium (11).

9. A biological detector according to any one of Claims 1 to 8, wherein the magnification means (4) for the samples
5 comprise a culture chamber (10) containing a culture or magnification medium (11) adapted to the type of suspected biological agent, said chamber being provided with heating means (7).

10. A biological detector according to any one of Claims
10 1 to 9, wherein the means (5) to detect biological agents comprise biological substances such as enzymes, antibodies, proteins, cellular fragments or sequences of DNA or RNA.

11. A biological detector according to Claim 10, wherein
15 the biological substances are associated with chemical substances such as metalloids, colloids, or colorants whose reaction with an antigen enables the visualisation of the detection of the suspected biological agent.

12. A biological detector according to any one of Claims
1 to 11, wherein the means (5) to detect biological agents
20 comprise a support impregnated with specific antibodies for the suspected biological agent, enabling the immuno-detection of said biological agent.

13. A biological detector according to any one of Claims
1 to 12, wherein it incorporates a septum (6) placed near to
25 the culture chamber (10) so as to enable the extraction by syringe of said culture.

14. A biological detector according to any one of Claims
1 to 13, wherein the detection target may be the suspected
biological agent, a product of its metabolism, a molecule or
30 its metabolites.

15. A biological detector according to any one of Claims
1 to 14, wherein the suspected biological agent is anthrax (*Bacillus anthracis*) or the smallpox virus.

16. A biological detector according to any one of Claims
35 1 to 15, wherein it is in the form of a tube (2) incorporating at one end means (8) to extract the sample, in its median part the means (4) enabling the culture or magnification of said sample and at the other end the means

(5) to detect the suspected biological agent, these means being associated with sealing means.

17. A biological detector according to any one of Claims 1 to 16, wherein it constitutes packaging means for the magnified culture enabling its subsequent analysis and use as evidence.

18. A biological detector according to any one of Claims 1 to 17, wherein it incorporates a system of power supply that supplies the heating means (7).

10 19. A biological detector according to any one of Claims 1 to 18, wherein it comprises a pilot light indicating the end of the culture or biological magnification phase and the onset of the detection phase.

20. A biological detector according to any one of Claims 15 1 to 19, wherein it comprises security means preventing it from being opened, deliberately or not, after the sample has been inserted.

21. The application of the detector according to any one of the above Claims to the simultaneous detection of several 20 biological agents.